

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (currently amended) An electrical signalling system, the electrical signalling system comprising:

a modulator, arranged to accept information and produce an alternating signal comprising containing repeated rising and falling edges in which the information is encoded, the encoding being by way of a the time difference between at least one of consecutive rising edges and or consecutive falling edges; and

a transmission path for the alternating signal from the modulator to a demodulator,

wherein the demodulator is arranged to detect a the signal edge and store a record of the alternating signal around the signal that edge, and to compare a subsequent part of the alternating signal with the that record thereby to detect a like signal edge and detect the time difference between the signal edge and the like signal edge edges.

2. (currently amended) The An electrical signalling system according to claim 1, wherein in which the record is in the form of a digitized digitised version of the alternating signal.

3. (currently amended) The An electrical signalling system according to claim 1 or claim 2, wherein in which the record is compared with the [[a]] subsequent part of the alternating signal to detect the time difference between like signal edges.

4. (currently amended) The An electrical signalling system according to claim 3, wherein in which a second like signal edge is detected notwithstanding noise-induced differences between the subsequent part of the alternating signal and the record.

5. (currently amended) The An electrical signalling system according to claim 4, wherein in which an the error limit is measured by way of an rms value of the time difference in the signals.

6. (currently amended) The An electrical signalling system according to claim 5, wherein in which the rms value of the time difference in the signals is calculated for a range of possible time differences difference and a minimized the time difference for which the rms value of the time difference is minimized minimised is selected from the range of the possible time differences.

7. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the transmission path further comprises an is imperfect transmission path.

8. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the transmission path further comprises an is inductive transmission path.

9. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the transmission path further comprises is a three-phase electrical supply cable.

10. (currently amended) The An electrical signalling system according to claim 9, wherein in which the three-phase electrical supply cable leads to downhole equipment for extraction of at least one of oil and or gas.

11. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the demodulator also detects unlike signal edges and then detects a second the time difference therebetween.

12. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the modulator is adapted to include multiple sources of data consecutively.

13. (currently amended) The An electrical signalling system according to claim 12, wherein in which the modulator includes $(n+1)$ signals, including n signals of information to be encoded and a synchronization synchronisation signal.

14. (currently amended) The An electrical signalling system according to claim 13, wherein in which the synchronization synchronisation signal takes the form of a unique pulse.

15. (currently amended) The An electrical signalling system according to claim 14, wherein in which the unique pulse has is a unique pulse size at most one of shorter and or longer than the limits of acceptable pulse size for the encoded data.

16. (currently amended) The An electrical signalling system according to claim 14, wherein in which the unique pulse is at a different signal level than to the alternating signal signals conveying encoded information.

17. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which the data is encoded such that a specific range of pulse times corresponds correspond to at least one of a specific value of input information and ranges

er range of values of the input information.

18. (currently amended) The An electrical signalling system according to claim 17, wherein in which the ranges of values of the input information are of substantially identical width.

19. (currently amended) The An electrical signalling system according to claim 17, wherein in which the ranges of values of the input information are of variable width.

20. (currently amended) The An electrical signalling system according to claim 1 any one of the preceding claims, wherein in which a first signal indicates a the coarse range of values of the input information and a second signal indicates at least one of a specific value of the input information within the coarse range of values and a the fine range of values within the coarse range of values value of the input information.

21. (currently amended) The An electrical signalling system according to claim 20, wherein in which the first signal is encoded according to a different protocol than to the second signal.

22. (currently amended) The An electrical signalling system according to claim 1, wherein in which the record comprises consists of at least one selected value values of the alternating signal at at least one selected time times.

23. (currently amended) The An electrical signalling system according to claim 22, wherein in which the at least one selected value comprises a plurality of selected values and the at least one selected time comprises there are a plurality of selected times.

24. (currently amended) The An electrical signalling system according to claim 22 or
~~claim 23, wherein in which the at least one selected time is chosen by reference to an alternating~~
~~the signal value.~~

25. (currently amended) The An electrical signalling system according to claim 24, ~~wherein in~~
~~which the an at least one selected time is a the time at which the alternating signal crosses a~~
~~value intermediate the values between which the alternating signal alternates.~~

26. (currently amended) The An electrical signalling system according to claim 1 ~~any one of~~
~~the preceding claims, wherein in which the demodulator is arranged to compare the subsequent~~
~~part comparison of the alternating signal with and the record is by way of comparing alternating~~
~~the signal values at specific times.~~

27. (currently amended) The An electrical signalling system according to claim 22 ~~any one of~~
~~claims 22 to 25, wherein in which the demodulator is arranged to compare the subsequent part~~
~~comparison of the alternating signal with and the record is by way of comparing the times at~~
~~which specific alternating signal values are detected.~~

28. (currently amended) An electrical signalling system substantially as, the electrical signalling system comprising:

means for electrical signalling;

means for enabling the means for electrical signalling; and

means for using the means for electrical signalling, wherein each of the means for electrical signalling, the means for enabling the means for electrical signalling, and the means for using the means for electrical signalling cover at least one of corresponding structures and materials described herein with reference to and/or as illustrated in the accompanying figures and equivalents thereof.

29. (new) A method of electrical signalling, the method of electrical signalling comprising:

modulating using a modulator by:

accepting information; and

producing an alternating signal comprising repeated rising and falling edges in which the information is encoded, the encoding being by way of a time difference between at least one of consecutive rising edges and consecutive falling edges;

transmitting the alternating signal over a transmission path from the modulator to a demodulator, and

demodulating using the demodulator by:

detecting a signal edge;

storing a record of the alternating signal around the signal edge; and

comparing a subsequent part of the alternating signal with the record to detect a like signal edge and detect the time difference between the signal edge and the like signal edge.

30. (new) The method of electrical signalling of claim 29, wherein the record is in the form of a digitized version of the alternating signal.